

Minimum applicable design standards require that a paved roadway in this area be a minimum 18 feet wide, with 9-foot travel lanes in each direction. Widening of the existing road bed would be required to meet minimum design standards in Section C of the project. Therefore, paving the existing roadbed in place would not meet minimum design standards for paved roadways.

Alternative C would marginally improve the quality of travel for portions of Needmore Road and avoid substantial impacts to environmental resources. However, it would result in a facility that does not meet minimum design standards for paved roadways in Section C of the project.

Please see **Figure 3** for a depiction of the roadway alignment for this alternative.

D. Pave in Place – 18-foot Minimum Width Alternative

This alternative proposes to improve Needmore Road to a 2-lane paved facility consisting of a minimum 9-foot travel lane in each direction, with a minimum roadway width of 18 feet, and improvements to the shoulders of the roadway. This alternative will improve the facility to conform to NCDOT Division 14 Secondary Road Standards in Sections A, B, C and D where possible without encroaching on the Little Tennessee River or cutting into the existing acidic rock along the project. NCDOT Division 14 Secondary Road Standards include a minimum of 9-foot travel lanes, a minimum 18 feet of roadway width, and roadway shoulder widths of 4 feet to 6 feet. In general, this alternative improves Project Section A, B, and D to NCDOT Division 14 Secondary Road Standards. It improves the roadway to a minimum 18-foot width in Section C and also has limited shoulder improvements in Section C. Widening will be asymmetrical away from the Little Tennessee River in Section C and will require cutting into the existing acidic rock in Section C.

Please see **Figure 3** for a depiction of the roadway alignment for this alternative.

E. Division 14 Secondary Road Standards with Design Exceptions Alternative

Alternative E proposes to improve Needmore Road to a 2-lane paved facility consisting of a minimum 9-foot travel lane in each direction, with a minimum roadway width of 18 feet, and improvements to the shoulders of the roadway. This alternative will improve the entire facility to conform to NCDOT Division 14 Secondary Road Standards in Sections A, B, C and D.

This alternative paves Needmore Road and combines NCDOT Division 14 Secondary Road Standards with design exceptions. NCDOT Division 14 Secondary Road Standards include a minimum roadway width of 18 feet with shoulder widths of 4 feet and 6 feet. Therefore, the total typical section width for this alternative is 28 feet. The design exceptions can reduce the shoulder widths of the facility. However, design exceptions cannot include reducing the minimum roadway width below 18 feet.

To minimize impacts to the high quality natural resources in the project area, this alternative includes asymmetrical widening of the roadway away from the Little Tennessee River. Asymmetrical widening will eliminate the need for fill in the Little Tennessee River and avoids direct impact to this resource.

In the area of the project (Section C) where the existing roadway narrows below 18 feet and the existing corridor is constrained by acidic rock on one side and the Little Tennessee River on the other side, the majority of impacts associated with this alternative will be to the acidic rock.